



PATENT
930040-2019

THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant(s) : Goran Nilsson et al.
Serial No. : 09/663,333
For : **USE OF A TRANSFER BELT FOR A SOFT
TISSUE PAPER MACHINE**
Filed : September 18, 2000
Examiner : C. Lopez
Art Unit : 1731

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APPEAL BRIEF OF APPELLANT

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Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

This is an Appeal from the Final Rejection by the Examiner dated May 29, 2003, which issued in the above-identified application, finally rejecting claims 1-8. This Brief is submitted in triplicate as required by 37 C.F.R. §1.192(a). A Notice of Appeal is filed herewith. As prosecution was reopened prior to consideration of a previous Appeal filed June 12, 2002, the fee paid (\$320) for that Appeal applies to the present Appeal on the same application. The Assistant Commissioner is authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-0320.

RELIEF REQUESTED

It is respectfully requested that the rejection of claims 1-8 be reconsidered and withdrawn, and that a Notice of Allowance promptly issue.

REAL PARTY IN INTEREST

The real party in interest is Albany International Corporation, to which Appellant has assigned all interest in this application.

RELATED APPEALS AND INTERFERENCES

Upon information and belief, the undersigned attorney does not believe that there is any appeal or interference that will directly affect, be directly affected by or have a bearing on the Board's decision in the pending appeal.

REQUEST FOR AN ORAL HEARING

Appellants do not request an oral hearing.

STATUS OF THE CLAIMS

The Application was filed with claims 1-8 on September 18, 2000 and assigned Application Serial No. 09/663,333.

In a first Office Action dated March 8, 2001, the Examiner rejected claims 1-8 under 35 U.S.C. § 112, second paragraph as allegedly indefinite. The Examiner additionally rejected claims 1-4, 6 and 8 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 5,393,384 (Steiner et al.) in view of U.S. Patent No. 5,298,124 (Eklund et al.), claim 5 under 35 U.S.C. § 103(a) as unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 4,529,643 (Lundström), and claim 7 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 5,556,509 (Trokhan et al.).

In response to this first Office Action, Appellants filed an Amendment on August 10, 2001, amending claims 1-8 to overcome the §112, second paragraph and §103(a) rejections.

The Examiner then issued a Final Office Action on October 18, 2001 withdrawing the rejection of claims 1-8 under 35 U.S.C. § 112, second paragraph and maintaining the rejection of claims 1-4, 6 and 8 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 5,393,384 (Steiner et al.) in view of U.S. Patent No. 5,298,124 (Eklund et al.), claim 5 under 35 U.S.C. § 103(a) as unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 4,529,643 (Lundström), and claim 7 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 5,556,509 (Trokhan et al.).

In response to the Final Office Action, Appellants filed an Amendment After Final on March 18, 2002 requesting reconsideration.

The Examiner then issued an Advisory Action on April 4, 2002 which indicated that the request for reconsideration did not place the application in condition for allowance for reasons previously set forth in the Final Office Action.

A Notice of Appeal, a request for two month extension of time, and the requisite fee was filed by Appellant on March 18, 2002. Pursuant to that Notice, an Appeal Brief was filed on June 12, 2002.

Before that Appeal was considered by the Board, the Examiner issued a non-final Office Action on August 27, 2002, reopening prosecution and withdrawing the rejection of claim 5 under 35 U.S.C. § 103(a) as unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 4,529,643 (Lundström). The Examiner set forth new grounds of rejection, which included the rejection of claims 3 and 4 under 35 U.S.C. § 112, second paragraph. The Examiner additionally rejected claims 1-6 and 8 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 5,393,384 (Steiner et al.) in view of U.S. Patent No. 5,298,124 (Eklund et al.). The Examiner also rejected claim 7 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 5,556,509 (Trokhan et al.).

In response to that Office Action, Appellants filed an Amendment on October 24, 2002, amending claims 1-8 to overcome the §112, second paragraph, and §103(a) rejections.

The Examiner then issued a further Office Action on January 15, 2003, withdrawing the rejection of claims 3 and 4 under 35 U.S.C. § 112, second paragraph. The Examiner also

withdrew the rejection of claim 7 under § 103(a), finding claim 7 to be allowable. However, the Examiner on new grounds rejected claims 1-8 under 35 U.S.C. § 112, first paragraph. He also maintained the rejection of claims 1-6 and 8 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 5,393,384 (Steiner et al.) in view of U.S. Patent No. 5,298,124 (Eklund et al.). The Examiner further rejected claims 1-4 and 6-8 on double patenting grounds.

In response to that Office Action, Appellants filed an Amendment on March 12, 2003, amending claims 1-8 to overcome the §112, first paragraph rejection. In addition, Appellants presented claim 7, deemed allowable by the Examiner, in independent form and amended to include all of the limitations of the base claim. Appellants also amend claims 1-6 and 8 to overcome the §103(a) rejections. In addition, Appellants duly noted the double patenting rejection.

The Examiner then issued a Final Office Action on May 29, 2003, withdrawing the §112, first paragraph rejection of claims 1-8. Additionally, the Examiner issued a new rejection of claims 1-8 under 35 U.S.C. § 112, second paragraph. The Examiner also maintained the rejection of claims 1-6 and 8 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 5,393,384 (Steiner et al.) in view of U.S. Patent No. 5,298,124 (Eklund et al.).

This Appeal Brief is being filed pursuant to a Notice of appeal filed herewith. Accordingly, the status of the claims may be summarized as follows:

Claims Allowed:	None.
Claim Containing Allowable Subject Matter:	7
Claims Objected to:	None.
Claims Rejected:	1-8.

STATUS OF THE AMENDMENTS

Appellant believes that all the submitted Amendments have been entered.

THE REJECTION UNDER 35 U.S.C. 112, SECOND PARAGRAPH

In the final official action, claims 1-8 were rejected under 35 U.S.C. 112, second paragraph for improper antecedent basis with regard to the term “directly.” The Examiner in the

action suggests a way to resolves this which is acceptable to Appellants. Accordingly, it is submitted that this rejection is not in issue.

SUMMARY OF THE INVENTION

The present invention is directed to, *inter alia*, an improvement for a tissue machine in which a transfer belt carries a tissue web to a Yankee drying cylinder and transfers the tissue web to the cylinder at a nip, wherein the transfer belt's web-contacting surface has a pressure-sensitive resettable degree of roughness.

ISSUE PRESENTED

Whether, under 35 U.S.C. § 103(a), claims 1-6 and 8 are unpatentable for obviousness over U.S. Patent No. 5,393,384 (Steiner et al.) in view of U.S. Patent No. 5,298,124 (Eklund et al.).

GROUPING OF CLAIMS

For purposes of this appeal, claims 1-8 are to be considered.

ARGUMENTS

Claims 1-6 and 8 Are Improperly Rejected as Unpatentable Under 35 U.S.C. § 103(a)

Regarding claims 1-6 and 8, these claims were rejected under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 5,393,384 (Steiner et al.) in view of U.S. Patent No. 5,298,124 (Eklund et al.).

The Final Office Action of May 29, 2003, at paragraph 3, alleges that it would be obvious to use Steiner's paper machine with Eklund's transfer belt to facilitate transferring a paper web to a Yankee cylinder.

Appellant respectfully traverses this position for the following reasons.

Steiner et al. shows a tissue machine which includes an impermeable carrier belt. The belt is shown to carry a tissue web to a Yankee drying cylinder, where the tissue web is transferred from the belt to the cylinder at a nip formed between a roll and the cylinder. As discussed in the present application, this transfer is not always accomplished reliably because the

tissue web tends to remain on the smooth belt following exit from the nip. (Specification; page 1, line 22 to page 2, line 9).

Steiner et al. teaches (column 2, lines 15 through 18) that the smooth belt is impermeable to water, and that the forces of adhesion between it and a paper sheet are greater than those between any press fabric and a paper sheet. This is because the belt is much smoother than a press fabric. Moreover, a thin water film between the belt and the paper sheet keeps the sheet on the belt and is the source of the adhesion between the two.

Figures 6 and 7 of Steiner et al. show the transfer of a paper sheet directly from the belt to the surface of a Yankee cylinder at a nip. However, there is no teaching whatsoever in Steiner et al. on how the forces of adhesion acting between the paper sheet and the belt can be overcome on contact with the Yankee cylinder. Instead, it is Appellants, in their present application, who recognized that such a transfer, that is, from a smooth belt to a smooth Yankee cylinder, would not occur reliably, if at all.

Eklund et al. shows a transfer belt whose surface has a pressure-responsive recoverable degree of roughness. That is to say, the transfer belt has a smooth surface when compressed in a press nip, but a relatively rough surface when not in a press nip. This is a feature that enables a paper web to be removed from the transfer belt downstream from a press nip by a vacuum transfer roll.

In the present invention, as claimed mostly broadly in claim 1, a belt of the variety shown in Eklund et al. is used to transfer a tissue web to a Yankee drying cylinder at a nip. However, Eklund et al. teaches that the surface of the transfer belt becomes smooth in a nip, and that, as a consequence, a paper or tissue web would not be readily removable at such a point.

More specifically, in Eklund et al., the transfer belt in question is shown to carry a paper web through press nips. It should be noted, however, that without exception, the paper web is carried from the nip on the surface of the belt because the belt is smoother (in the nip) than the press fabric used to dewater it. Transfer from the surface of the transfer belt is always shown to be accomplished using a vacuum-transfer roll, not a nip, such as that formed by two rolls. The Eklund et al. reference does not teach or suggest that a paper web could be transferred from the transfer belt in a press nip.

As noted above, compressing the belt makes its surface smooth and allows a thin water film to form between the belt and the paper sheet. This film provides adhesion between the belt and the sheet so that the sheet follows the belt as it leaves the nip. In this connection, the belt expands in the direction of thickness and approaches its non-compressed state such that the water film breaks up.

Moreover, Eklund et al. clearly teaches that the belt is smoothest under compression, that is, in a press nip. Eklund et al. also teaches that the smoothness under compression is what allows the water film which keeps the sheet firmly in contact with the belt surface to form in the first place. Sheet release occurs outside a press nip because of increasing surface roughness as the belt expands, and because the hydrophilic/hydrophobic areas allow water beads to form from the water film between the paper web and the surface of the belt. Both of these effects allow the sheet to be released from the surface of the belt outside of a nip.

Accordingly, the present invention, now claimed most broadly in claim 1 as an improvement for a tissue machine in which the belt shown in Eklund et al. carries a tissue web to a Yankee drying cylinder and transfers the tissue web to the cylinder at a nip, is neither shown nor suggested by the combined teachings of Steiner et al. and Eklund et al., because both Steiner et al. and Eklund et al. teach away from this.

In particular, Steiner fails to even consider problems associated with transferring a paper web to a Yankee cylinder. Instead, Steiner is concerned with avoiding rewetting of a web in a press section (lines 43-46 of col. 1; and lines 23-24 of col. 2, of Steiner). Accordingly, there is nothing in Steiner that would motivate one of ordinary skill in the art to improve the transfer belt as claimed in the present application, because Steiner teaches away from this.

Eklund also teaches away from combining the references. That is, since Eklund's belt is usable for transfer of a paper web from the press section to a dryer fabric, it would be surprising that Eklund's belt is advantageous in transferring a web from a shoe press nip directly to a Yankee cylinder (lines 13-18 of page 4 of the present Application). In a Yankee cylinder, the conditions are, in fact and as is known, quite different from those in a press nip. In a Yankee cylinder, there is no pressing of the soft tissue web for direct dewatering but it is instead a matter of supporting the soft tissue web against the outer surface of the Yankee cylinder, such that the fibers of the soft tissue web adhere to the surface of the cylinder. Yet precisely this effect is

achieved by Appellants' claimed transfer belt, which cannot be achieved or is achieved to a substantially smaller extent by a transfer belt according to Steiner for the reason described above (see also, for example, Figure 1 and page 4 of the present Application). Consequently, Eklund would not motivate one of ordinary skill in the art to reconstruct Steiner to include an Eklund belt, because Eklund teaches away from this. Therefore, claim 1 is respectfully submitted to be patentable thereover, as are claims 2-6 and 8 which depend from and further limit the subject matter claimed in claim 1.

In further support of the above arguments, it is well established that there must be some prior art teaching which would have provided the necessary incentive or motivation for modifying the teachings of Steiner et al. and Eklund et al. *In re Laskowski*, 12 U.S.P.Q. 2d 1397, 1399 (Fed. Cir. 1989); *In re Obukowitz*, 27 U.S.P.Q. 2d 1063 (B.P.A.I. 1993). Further, "obvious to try" is not the standard under 35 U.S.C. §103. *In re Fine*, 5 U.S.P.Q. 2d 1596, 1599 (Fed. Cir. 1988). Indeed, as stated by the Court in *In re Fritch*, 23 U.S.P.Q. 2d 1780, 1783-1784 (Fed. Cir. 1992): "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggests the desirability of the modification."

In particular, for a Section 103 rejection to be proper, both the suggestion of the claimed invention and the expectation of success must be founded in the prior art, and not Applicants' disclosure. *In re Dow*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988). In the present situation, both the suggestion of the claimed invention and the expectation of success are found only in Appellants' disclosure, and not in Steiner et al. and Eklund et al. These references fail to provide the necessary incentive or motivation that would lead a skilled artisan to practice the present invention. That is, Steiner et al. and Eklund et al. do not disclose or suggest an improvement for a tissue machine in which a transfer belt carries a tissue web to a Yankee drying cylinder and transfers the tissue web to the cylinder at a nip, wherein the transfer belt's web-contacting surface has a pressure-sensitive resettable degree of roughness.

Consequently, a reversal of the Section 103(a) rejection is believed to be in order and such action is respectfully requested.

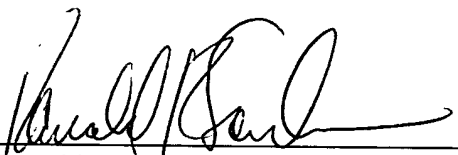
CONCLUSION

For the reasons discussed in this brief and the arguments of record (incorporated herein by reference), claims 1-6 and 8 are patentable over Steiner et al. and Eklund et al. It is, therefore, respectfully submitted that the Examiner erred in rejecting claims 1-6 and 8 and a reversal of the rejection of claims 1-6 and 8 by this Honorable Board, and prompt issuance of a Notice of Allowance, are earnestly solicited.

Respectfully submitted,

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APPENDIX

CLAIMS ON APPEAL

1. (Amended) In a soft tissue paper machine having an essentially impermeable transfer belt for conducting a soft tissue web through a shoe press nip in the press section of the paper machine, and from the shoe press nip to a Yankee cylinder in the dryer section of the paper machine in a closed draw, which Yankee cylinder forms, together with a transfer means, a transfer nip transferring the soft tissue web from the transfer belt to the Yankee cylinder, the improvement comprising an essentially impermeable transfer belt having a carrier and an elastically compressible polymer layer on its side facing the paper web, the polymer layer having a hardness between 50 and 97 Shore A and having a web-contacting surface which has a pressure-sensitive resettable degree of roughness, the web-contacting surface having a degree of roughness in a non-compressed state of $R_z = 2-80 \text{ } \mu\text{m}$, measured according to ISO 4287, Part I, and a lower degree of roughness of $R_z = 0-20 \text{ } \mu\text{m}$ when the polymer layer is compressed by a linear load of 20-220 kN/m applied to the essentially impermeable transfer belt as measured in a non-extended press nip,

wherein the transfer of said soft tissue web from said shoe press nip directly to the Yankee cylinder is improved due to said transfer belt's web-contacting surface having a pressure-sensitive resettable degree of roughness.

2. (Amended) An improvement as claimed in claim 1, wherein the essentially impermeable transfer belt has an air permeability of less than $6 \text{ m}^3/\text{m}^2/\text{min}$, measured according to the method stated in "Standard Test Method for Air Permeability of Textile Fabrics, ASTM D 737-75, American Society of Testing and Materials".

3. (Amended) An improvement as claimed in claim 1, wherein the polymer layer comprises a polymer composition taken from the group consisting of acryl polymer resin, polyurethane polymer resin and polyurethane/polycarbonate polymer resin composition.

4. (Amended) An improvement as claimed in claim 1, wherein the polymer layer comprises a particulate filler which has a hardness different from that of the polymer composition, and is taken from the group consisting of kaolin clay, polymer material or metal.

5. (Amended) An improvement as claimed in claim 1, wherein the polymer layer completely encloses the carrier.

6. (Amended) An improvement as claimed in claim 1, wherein the carrier is endless.

7. (Amended) In a soft tissue paper machine having an essentially impermeable transfer belt for conducting a soft tissue web through a shoe press nip in the press section of the paper machine, and from the shoe press nip to a Yankee cylinder in the dryer section of the paper machine in a closed draw, which Yankee cylinder forms, together with a transfer means, a transfer nip transferring the soft tissue web from the transfer belt to the Yankee cylinder, the improvement comprising an essentially impermeable transfer belt having a carrier and an elastically compressible polymer layer on its side facing the paper web, the polymer layer having a hardness between 50 and 97 Shore A and having a web-contacting surface which has a pressure-sensitive resettable degree of roughness, the web-contacting surface having a degree of roughness in a non-compressed state of $R_z = 2-80 \text{ } \mu\text{m}$, measured according to ISO 4287, Part I, and a lower degree of roughness of $R_z = 0-20 \text{ } \mu\text{m}$ when the polymer layer is compressed by a linear load of 20-220 kN/m applied to the essentially impermeable transfer belt as measured in a non-extended press nip,

wherein the transfer of said soft tissue web from said shoe press nip to the Yankee cylinder is improved due to said transfer belt's web-contacting surface having a pressure-sensitive resettable degree of roughness, and wherein the polymer layer is embossed to produce embossed soft tissue.

8. (Amended) An improvement as claimed in claim 1, together with a transfer means which comprises the transfer belt itself, which runs round a predetermined part of the Yankee cylinder to form an extended transfer nip.